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VII. *An Account of some luminous Arches. In a Letter from Edward Pigott, Esq. to Sir Henry C. Englefield, Bart. F. R. S.*

Read November 12, 1789.

DEAR SIR,

April 25, 1789.


THOUGH perhaps an account of the phænomenon of February 23. has been communicated to the Royal Society, I nevertheless flatter myself the following may be of some use, as the different appearances were observed with accuracy.

Being at Kensington on the above-mentioned date, I saw, at nine o'clock at night, a very singular, luminous arch in the sky, about 4 degrees in breadth, resembling much a bright white cloud, drawn out in great length, or something like the uncoloured northern lights, without flashes, but seemingly of a more substantial texture; the stars appeared very bright through it; it probably had already existed some time. At about 9 h. 7' I noted its track thus: it was visible very near the horizon in the N.E., passing between Arcturus and γ Bootis, almost covered the cluster of Coma Berenices, and β Geminorum, then passed to the south of Aldebaran, over the stars α , γ , or π Orionis, where its light was fainter, and disappeared a few degrees lower. Though its first appearance was that of a beautiful regular arch, I perceived, after a few minutes, its

form had varied a little, and became rather twisted, so that $\beta \pi$ was sometimes to the north or south of its center, without being uncovered. At $9\frac{1}{2}$ h. its light was much fainter, broader, and more crooked. At 9 h. 40' its length was decreased, extending only as far as the Gemini's feet. It also had moved to the south of the cluster in Berenice, and of $\beta \pi$, passing through Cancer. Its breadth at this time was considerably increased, perhaps to more than double what it was at first, and its brightness much faded. The southern side became flaky, having about half a dozen parts hanging down, not unlike the tails of Comets, the north side remaining even; it seemed approaching towards its dissolution. The air was remarkably clear, with a cold and strong westerly wind; flying clouds passing over it intercepted its light, and consequently the column appeared divided. The north horizon exhibited a faint aurora borealis. I imagine, if this phænomenon was well observed in distant parts, a parallax might be ascertained sufficiently to give us some idea of its elevation above the surface of the earth. Among the phænomena of this kind recorded in the Philosophical Transactions, there are two resembling so exactly the above, that they deserve the consideration of the learned; one was seen in 1734-5, the other in 1749.

Some years ago I also observed a few others, very similar to that just described; I shall therefore take the liberty of adding a short account of them.

At Brussels, March 14, 1774, at about seven o'clock in the evening, the sky being very clear, there appeared an arch resembling a bright white fog, about 8 or 9 degrees broad, tolerably well defined; the brightness of the stars it covered was diminished. It rose in the eastern horizon, passed through the constellations of μ , δ , ϵ , π , γ , over Aldebaran, and disappeared

disappeared in the Bull's back. The most condensed part of it was towards the middle in π ; sometimes it assumed this form , and sometimes that of an arch. The phænomenon lasted about three-quarters of an hour, and seemed not to have gone out of the zodiac, though when it disappeared, it was more to the south than when I first saw it. The air was cold, but not frosty. Towards midnight an aurora borealis was seen in the north, which appeared something like the phænomenon just mentioned; I did not see it.

March 15, 1774, at about $7\frac{1}{2}$ o'clock in the evening, a column of light appeared in the north, something like that of yesterday; weather very fine.

At Louvain, 1775, April 19, 9 h. 30', at night, after a storm, I saw a bright white line of light one or two degrees in breadth extending from N.N.E. through N. to N.W. almost parallel to the horizon, and elevated about 9 degrees. It was brighter in the center, and stars of the third and fourth magnitude which it covered were much diminished in brightness; it sometimes rapidly vanished and re-appeared, and altogether lasted near half an hour.

Wickhill in Gloucestershire, 1777, Feb. 26, at about 7 h. at night, I saw a faint white tract of light, not unlike a foggy column, about 6 or 8 degrees in breadth. It extended from the horizon W. by S. to E. by S. passing over the stars in Orion's feet, and a very little to the north of Sirius. It seemed to have no motion, or to alter in brightness. The air was rather foggy, with a few clouds and a little wind. At about 10 o'clock a flight aurora borealis appeared in the north with streaks, extending sometimes to the zenith.

These kinds of lights seem to differ from the common aurora borealis in several particulars: their light is more condensed; they assume the form of an arch or column, and appear either to the north, or south of the zenith, though I think ofteneft to the south.

I remain, &c.

EDW. PIGOTT.

